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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,654	03/22/2005	Masahito Tada	070795-0013	7124

20277 7590 10/26/2005

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EXAMINER	
WU, IVES J	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/528,654	TADA ET AL.	
	Examiner	Art Unit	
	Ives Wu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

(15)

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

(1). In view of Preliminary Amendment filed on March 22, 2005, this is a supplemental action of non-final rejection which supercedes prior non-final rejection dated on October 3, 2005. The 3 months short period starts upon the mailing date of this supplemental action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Jr. et al (US005547761A) in view of Becker et al (US004454047) and Hiraga et al (US006268469B1).

Chapman, Jr. et al (US005547761A) disclose a process after polymerization including discharge of the copolymer dispersion from the reactor and separation of copolymer from aqueous medium by one of the means well known in the art. One method is to stir vigorously until the polymer separates out as a non-water-wet powder which floats on the water and can be decanted from the water (Col. 8, line 27-33).

Chapman, Jr. et al **do not teach** the settlement of the mixture after the stirring.

However, Chapman, Jr. et al **teach** to decant the floating polymer powder. The word "decant" means to pour off without disturbing the sediment (page 366, The American Heritage College dictionary). It inherently possesses the sedimentation because a solid phase of precipitation in the mixture together with the liquid phase containing the floated polymer powder is formed already.

Moreover, Becker et al (US004454047) **teach** a removal process for oils and solids from aqueous systems (Col. 9, line 58; The term "oil" is used to cover broadly the water-immiscible materials present as dispersed particles in such system (Col. 8, line 31-33)). Usually, the subsequent quiescent settling of the agitated mixture, to produce the aqueous and non-aqueous phases as stratified layers (Col. 10, line 6-8).

The advantage of letting the mixture stand is to separate the "oil" phase (Col. 9, line 25-29) and to produce the aqueous and non-aqueous phase as stratified layers (Col. 10, line 6-8).

Therefore, it would have been obvious at time the invention was made to include the settling of the stirred mixture such as a copolymer dispersion taught by Becker et al in the process of Chapman, Jr. et al in order to achieve the advantage.

As to the process for preparing polyvinylidene fluoride copolymer in the **independent claim 11**, in view of substantially identical process disclosed by applicant and by the combined teaching of Chapman, Jr. et al and Becker et al (US004454047), it is reasonable to presume that the process of Chapman, Jr. et al and Becker et al would apply to the preparation of the polyvinylidene fluoride as presently claimed, further evidenced by Hiraga et al in citing: Known methods for fluorine-containing polymer coagulation are as follows. (1). A method for coagulation by stirring an emulsified dispersion mechanically to apply shearing force to the dispersion and break an emulsified state. (2). A method for coagulation by adding a coagulant

and then stirring to break an emulsified state. Both (1) and (2) methods are methods for breaking an emulsified state to coagulate fluorine-containing polymer particles. (Col. 1, line 23-39). Examples of the fluorine-containing copolymer are, for instance, TFE/Vdf copolymer (Col. 2, line 56-60)- **claim 12**. The burden is shifted to applicant to establish that the process of the present claim 11 is not the same as or obvious as that set forth by the references of Chapman, Jr. et al and Becker et al.

As to the ratio of scattered-light intensity measured to be 10 or lower in the **independent claim 11**, in view of substantially identical fluoropolymer disclosed by combined teaching of Chapman, Jr. et al and Hiraga et al, and by applicant, and substantially identical process disclosed by combined teaching of Chapman, Jr. et al and Hirrga et al, Becker et al, and by applicant, it is the examiner's position to believe that the polyvinylidene fluoride copolymer produced by the process disclosed by combined teaching of Chapman, Jr. et al, Hiraga et al and Becker et al would inherently possess the 10 or lower scattered-light intensity ratio. Since USPTO does not have proper means to conduct the experiments, the burden now is shifted to the applicant to prove otherwise. *In re Fitzgerald,* 205 USPQ 594 (CCPA 1980).

(3). **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Jr. et al (US005547761A) in view of Becker et al (US4454047) and Hiraga et al (US006268469B1), and further in view of Tsutsumi et al (EP 05-08802A1).

As to the limitation of Vinylidene monomer contents in the **dependent claim 13**, Chapman, Jr. et al, Becker et al and Hiraga et al **do not teach** the fluorine-containing polymer such as polyvinylidene fluoride copolymer having the Vinylidene fluoride monomer content of not less than 40 mol% and not more than 90 mol%.

However, Tsutsumi et al **teach** a ferroelectric film of a polyvinylidene fluoride copolymer which contains 70 mol% of Vdf in Example 1.

The advantage of containing 40 to 90 mol% of Vinylidene Fluoride monomers in the Vinylidene Fluoride copolymer product is to get large residual polarization so that the electric characteristics of the liquid crystal device becomes better (Tsutsumi et al – EP 05-08802A1; page 2, line 41-53).

Therefore, it would have been obvious at time the invention was made to use the VF monomer contents of 40 to 90 mol% for the polyvinylidene fluoride copolymer taught by Tsutsumi et al in the process of preparing the polyvinylidene fluoride copolymer disclosed by the combined teaching of Chapman, Jr. et al and Becker et al, Hiraga et al in order to obtain the aforementioned advantage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu
Art Unit: 1713

Date: October 20,2005

DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700